

Santa Clara County Ramp Metering Implementation

Presented By

*City of Santa Clara
Santa Clara Valley Transportation Authority
Caltrans – Traffic Systems*

February 24, 2011



Caltrans & VTA Mission/Vision Statements

□ Caltrans

– Mission:

- “Caltrans improves mobility across California.”

– Commitment and Teamwork

- “We are dedicated to public service and strive for excellence and customer satisfaction, and we inspire and motivate one another through effective communication, collaboration, and partnership.”

□ VTA

– Mission:

- “VTA Provides sustainable, accessible, community-focused transportation options that are innovative, environmentally responsible, and promote the vitality of our region.”

– Vision:

- “VTA builds partnerships to deliver transportation solutions that meet the evolving mobility needs of Santa Clara County.”



Keys For Successful Delivery

- ❑ Partnerships
- ❑ Systematic Approach and Communication
- ❑ Use Technology Appropriately



Partnerships

❑ Used Existing VTA Committee Structure

○ Technical Advisory Committee:

- Advises the Board on technical transportation issues.
- Consists of one staff member from each of the county's 15 cities, the county, and various other local government agencies.
- Assigns staff members to Systems Operations and Management (SOM) Working Group.



Partnerships

❑ Used Existing VTA Committee Structure

○ SOM Working Group:

- Composed of traffic engineers and transportation planners.
- Focuses on detailed technical tasks as directed by VTA TAC.



Systematic Approach and Communication

❑ SOM Working Group

- Monthly meetings
- Developed Memorandum Of Understanding (MOU) for ramp metering based on C/CAG MOU
- Guides ramp metering project development activities



Systematic Approach and Communication

□ Development of MOU

➤ Defined roles and responsibilities:

- Caltrans
- VTA
- Local Agencies

➤ Implementation of New Corridors

- Work direction provided by TAC and SOM Working Group.
- Keep public informed on system turn-ons.



Use Technology Appropriately

❑ Local Traffic Responsive Metering

- Select metering plans based on congestion upstream of on-ramp.
- Develop several metering plans to accommodate changes in demand on the on-ramp during the peak period.

❑ Develop Plans to Address Local Concerns and Needs

- Use Available Storage at on-ramps and local streets.
- Avoid Impacts to Local Streets by not blocking through movements.

❑ Use End-of-Queue Loops

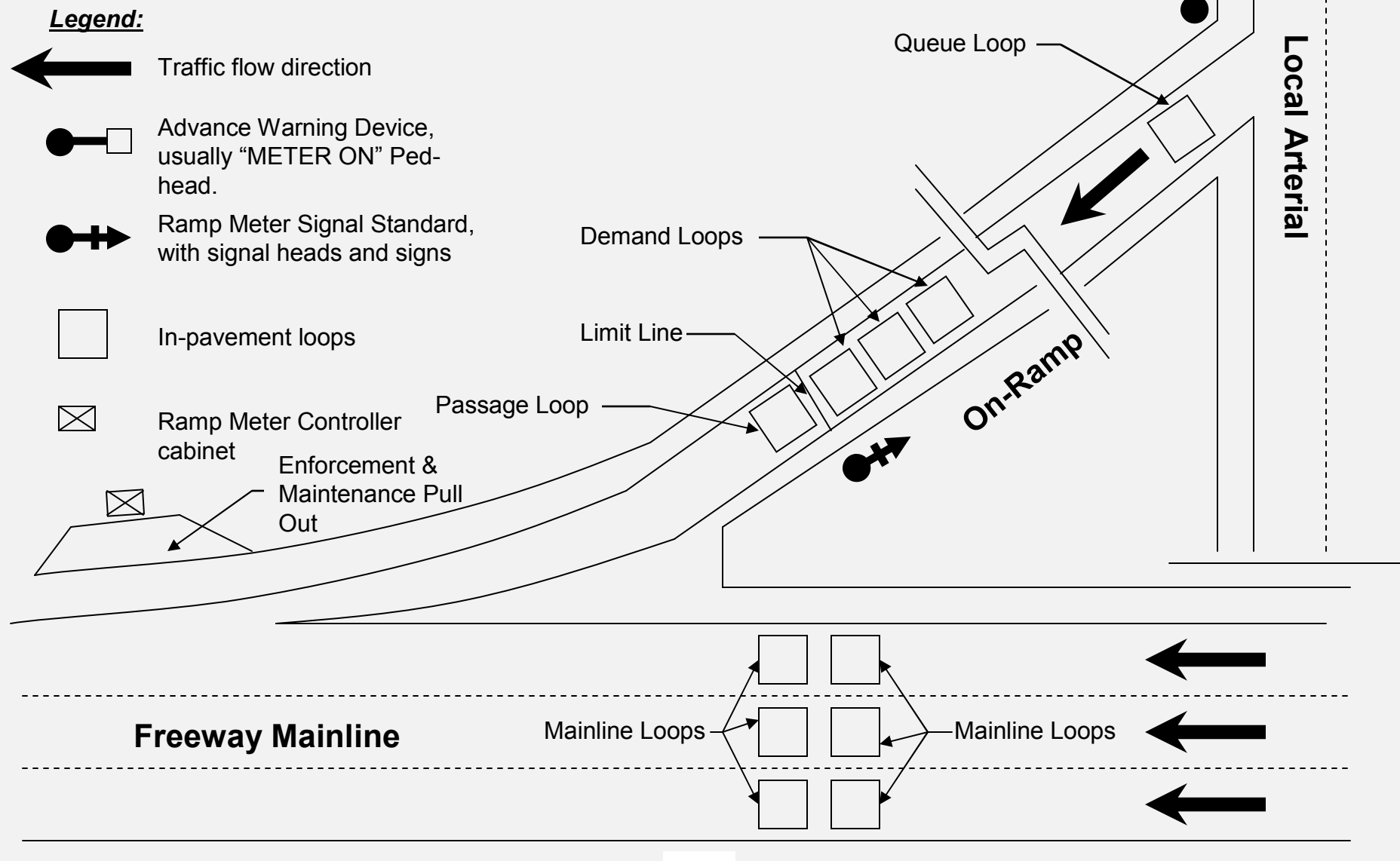




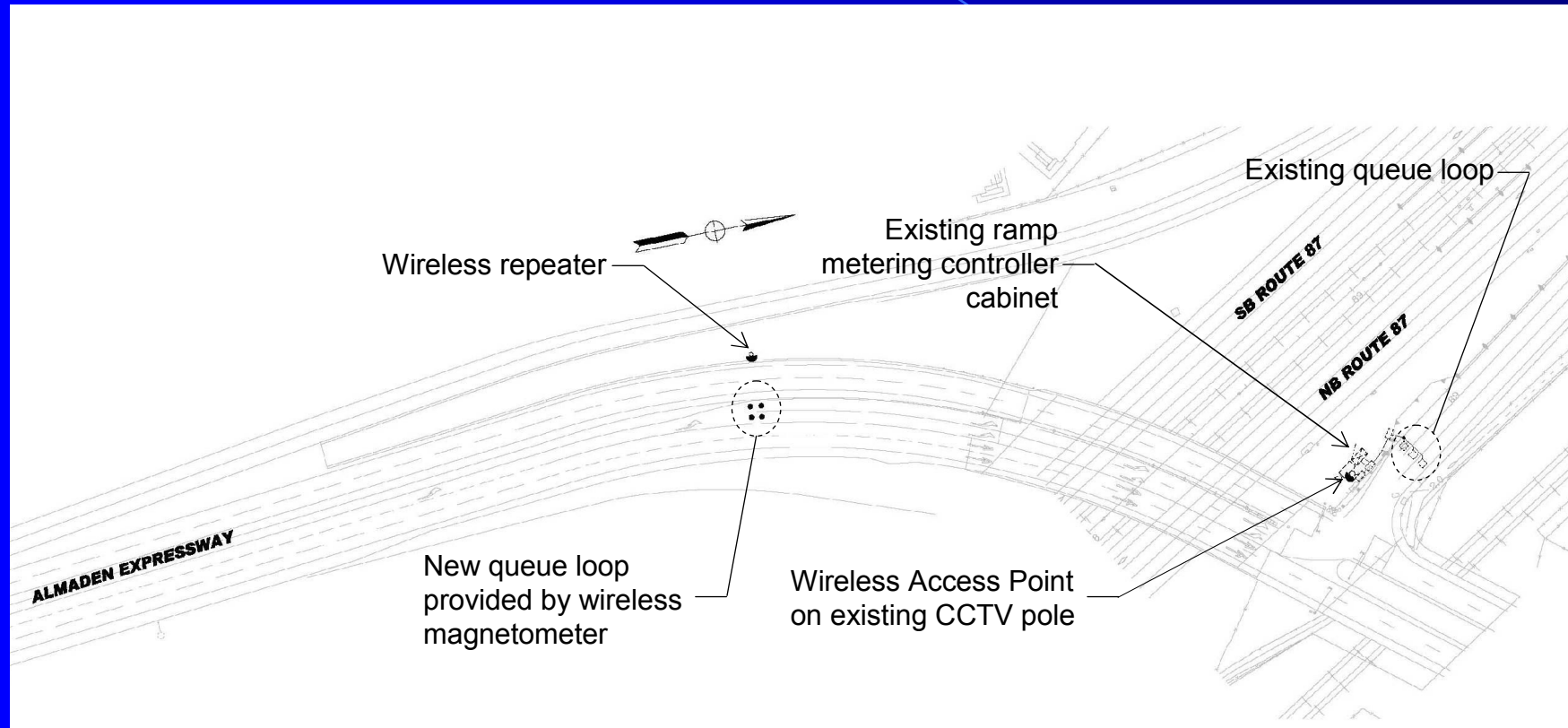
Ramp Metering Hardware Example



(Typical One Lane On-Ramp)



NB SR 87/Almaden Expressway Example



Facts and Findings

❑ Five Corridors Funded by \$2 Million in CMAQ

➤ AM Peak Period 6 AM to 10 AM

- NB SR 87 completed & evaluated

➤ PM Peak Period 3 PM to 7 PM

- SB SR 87 completed & evaluated
- SB SR 85 between Almaden Expwy. & Cottle Rd. completed
- SB US 101 between Embarcadero Rd. & De La Cruz Blvd completed & being evaluated
- SB I-880 between SR 237 and I-280 being implemented



Facts and Findings

■ Measured Improvements

➤ NB SR 87 in AM Peak Period

- 295 vehicle-hour reduction in delay
- Average travel time reduced by over three minutes (27% reduction)

➤ SB SR 87 in PM Peak Period

- 735 vehicle-hour reduction in delay
- Average travel time reduction by over eight and a half minutes (39% reduction)



Facts and Findings

❑ Measured Improvements

➤ SB SR 85 in PM Peak Period

- 170 vehicle-hour reduction in delay
- Average travel time reduced by over two and a half minutes (41% reduction)
- Existing bottleneck between SR 87 and Blossom Hill Rd. eliminated

❑ Estimated O&M Costs

- ### ➤ \$800K per year for O&M Costs for D4 (Bay Area), or \$2500 per meter per year.



A photograph of a residential street intersection. In the foreground, a line of cars is stopped at a traffic light. The lead car is a gold SUV. Behind it are a red car and a silver car. The road is paved and has white lane markings. To the left, there are trees and a white house with a brown roof. To the right, there are more trees and a white car is visible in the distance. The sky is clear and blue. The text "Got Questions?" is overlaid in the center of the image in a red, bold, sans-serif font.

Got Questions?